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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,857	04/16/2004	Arnold Schneider	DFS-172-A	2090
22825	7590	12/16/2005	EXAMINER	
WILLIAM M HANLON, JR YOUNG & BASILE, PC 3001 WEST BIG BEAVER ROAD SUITE 624 TROY, MI 48084-3107			SELLS, JAMES D	
			ART UNIT	PAPER NUMBER
			1734	

DATE MAILED: 12/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/826,857

Applicant(s)

SCHNEIDER, ARNOLD

Examiner

James Sells

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-12 and 14-24 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,2,4-12 and 14-24 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4-7, 10 and 14-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nayar et al (US Patent 5,707,483) in view of Couillard et al (US Patent 6,454,890) in further view of McNichols et al (US Patent 6,547,903) and Brennecke et al (US Patent 5,817,199).

Nayar discloses a rotary acoustic horn. As shown in Fig. 3, rotary horn 10 has weld face 16 and has a weld width of up to 12.7 cm (5 in). At col. 2, lines 38-41, Nayar discloses that a half wavelength horn has a total length of about 12.7 cm (5 in).

However, Nayar et al does not disclose the anvil, transformer or converter as claimed by the applicant. Regarding these differences, the applicant is directed to the reference of Couillard et al.

Couillard discloses an ultrasonic bonding apparatus. As shown in Figs. 1-2, the apparatus comprises rotary ultrasonic horns 24 and 34, which cooperate with rotary anvils 26 and 36. Drive mechanism 68, comprising an ultrasonic generator, boosters, amplifiers, and drive assembly provide the desired rotation and ultrasonic excitation required (see col. 11, line 62 through col. 12, line 65). It is the examiner's position that

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the various components of this drive mechanism function as applicant's claimed transformer and converter.

It would have been obvious to one having ordinary skill in the art to employ an anvil and drive mechanism, as taught by Couillard, in the apparatus of Nayar in order to facilitate welding or bonding of various materials.

However, Nayar does not disclose the two transformers and converters as claimed by the applicant. Regarding these differences, the applicant is directed to the reference of McNichols et al.

McNichols discloses a rotary ultrasonic horn. As shown in Fig. 13a, the system comprises first and second ultrasonic exciters 82 and 84 and first and second ultrasonic boosters 74 and 76 positioned on opposite sides of rotary ultrasonic horn 28.

It would have been obvious to one having ordinary skill in the art to employ ultrasonic exciters and boosters on opposite sides of a rotary ultrasonic horn, as taught by McNichols, in the rotary horn of Nayar in order to provide stronger, more reliable energy to the horn.

However, Nayar does not disclose the two rotating ultrasonic horns arranged in tandem as claimed by the applicant. Regarding this difference, the applicant is directed to the reference of Brennecke et al.

Brennecke discloses an ultrasonic bonding device. As shown in Figs. 1-2, the device comprises anvil roll 20 which cooperate with rotary ultrasonic horns 24a-d to weld materials 14 and 16 together. In particular, the figures show horns 24b and 24d in a tandem configuration and horns 24a and 24c in a tandem configuration in the manner

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claimed by the applicant. Such a tandem configuration inherently provides improved welds with greater operational speeds. For these reasons, it would have been obvious to one having ordinary skill in the art to employ two rotating ultrasonic horns arranged in tandem, as taught by Brennecke et al, in the apparatus of Nayar as described above

Regarding claim 5, the weld face 16 of rotary horn 10 disclosed by Nayar appears to have a smooth outer surface in the manner claimed by the applicant.

Regarding claims 10 and 13-22, it is the examiner's position that the specific configuration of the rotation roll (i.e. smooth or patterned, hollow shaft with trunnions, offset tandem, waisted, thicker diameter, swelling, skewed axis) and the anvil (i.e. smooth or patterned, knife or blade) are within the purview of one having ordinary skill in the art and would have been obvious to employ in the device of Nayar in view of Couillard as a matter of design choice based upon desired physical properties of the articles being manufactured.

3. Claims 2 and 8-9 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nayar et al in view of Couillard in further view of McNichols and Brennecke et al as described above in paragraph 2 in view of Mlinar et al (US Patent 5,976,316).

Mlinar discloses a mounting system for a rotary acoustic horn. As shown in the figures, the apparatus comprises rotary ultrasonic horn 10 and mounting system 14. Mounting system 14 comprises bearings 40 which permit rotation of the horn 10 relative to housing 16.

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It would have been obvious to one having ordinary skill in the art to employ bearings, as taught by Mlinar, in the apparatus of Nayar as described above in order to facilitate rotation of the rotary ultrasonic horn.

Regarding claims 8-12, it is the examiner's position that the adjustable pressure application and heat or cooling system are within the purview of one having ordinary skill in the art and would have been obvious to employ in the device of Nayar in view of Mlinar as a matter of design choice based upon desired physical properties of the articles being manufactured.

Response to Arguments

4. Applicant's arguments with respect to claims 1-2 and 4-12 and 14-24 have been considered but are moot in view of the new ground(s) of rejection.

Telephone/Fax

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Sells whose telephone number is (571) 272-1237. The examiner can normally be reached on Monday-Friday between 9:30 AM and 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached at (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.



**JAMES SELLS
PRIMARY EXAMINER
TECH. CENTER 1700**